

The Burden of Diarrheal Illness in FoodNet, 2000-2001

Hawkins M, DeLong S, Marcus R, Jones T, Shallow S, Morse D, McCombs K, Courtney A, Medus C, Shiferaw B, Imhoff B, and the EIP FoodNet Working

Background: An estimated 76 million food-related illnesses occur annually in the United States. Since 1996, the Centers for Disease Control and Prevention's Foodborne Disease Active Surveillance Network (FoodNet) has conducted periodic surveys of the population to determine the prevalence of diarrheal illness, and frequency at which persons with diarrhea seek medical care and submit stool specimens. These data are useful in determining the burden of foodborne diseases.

Methods: The FoodNet population survey was designed to ascertain demographic, health, and food preference information among residents of Connecticut, Georgia, Minnesota, Oregon, and select counties in California, New York, Maryland, and Tennessee (population 29.5 million). The 131-item questionnaire was administered by telephone using standard Behavioral Risk Factor Surveillance System methodology. One member of each household contacted was randomly selected to complete the interview. Participants were asked about activities in the month prior to interview. We attempted to interview 150 persons per month in each of the FoodNet sites between March 2000 and February 2001. We defined acute diarrheal illness as ≥ 3 loose stools in 24 hours with impairment of daily activities or duration of diarrhea > 1 day.

Results: Of the 14,647 persons interviewed, 5761 (39%) were male; the median age was 41 years. Of the 14,046 respondents who denied a chronic gastrointestinal disease, 659 (5%) reported an acute diarrheal illness during the month prior to the interview. The prevalence of illness was highest among children less than 5 years (9%) and lowest among those over 65 years (2%). Rates of illness were similar among education, income, gender, and residence groups but ranged from 2% in Asian/Pacific Islanders to 10% in those of mixed race. Of those with an acute diarrheal illness, 18 (3%) reported blood in their stool, 152 (23%) sought medical care; of those seeking medical care 26 (17%) were asked to submit a stool specimen, and 73 (48%) were prescribed antibiotics for their illness. Only 7 (27%) of the 26 who submitted stool samples were prescribed antibiotics.

Discussion: Diarrheal illness continues to impose a large burden of disease with a marked prevalence and high proportion of ill persons seeking medical care. However, few persons seeking medical care submitted a stool specimen, illustrating that there are many more ill persons for each laboratory-confirmed infection. Including a factor of 0.7 to account for test sensitivity, these data indicate there are roughly 36.5 cases of diarrheal illness for each diagnosed infection. This is similar to multipliers used to develop recent estimates, and suggests that changes in reported incidence may reflect changes in illness rates rather than changes in health seeking behavior.

Suggested citation:

Hawkins M, DeLong S, Marcus R, Jones T, Shallow S, Morse D, McCombs K, Courtney A, Medus C, Shiferaw B, Imhoff B, and the EIP FoodNet Working. The Burden of Diarrheal Illness in FoodNet, 2000-2001. Conference on Emerging Infectious Diseases. Atlanta, GA, March 2002.